Amendments to the Claims:

1. (previously presented) A system for locating a specific value contained in an array of N data values, the specific value being the result of a binary operation defined over the array of N data values wherein each data value is a plurality of bits wide, the system comprising a plurality of decision units grouped in successive computation stages wherein:

   (a) each decision unit receives a pair of input values, each input value containing a data value and a partial address; and

   (b) each decision unit generates a value representative of a selected data value and the partial address of the selected data value and the decision unit of the last computation stage contains the specific value, wherein each of the plurality of decision units comprises:

   (i) a binary operator for generating a binary decision representative of a local address of the selected data value,

   (ii) a multiplexer coupled to the binary operator for generating one of the pair of input values as output and with the output being selected by the binary decision, and

   (iii) a storage element coupled to the binary operator and the multiplexer for storing the output of the multiplexer and the binary decision which is added to the partial address of the selected data value.

2. (canceled)

3. (previously presented) The system of claim 1, wherein the binary operator selects the minimum value of the pair of data values contained in the pair of input values.

1   4. (previously presented) The system of claim 1, wherein the
2   binary operator selects the maximum value of the pair of data
3   values contained in the pair of input values.

1   5. (canceled)

1   6. (previously presented) The system of claim 1, wherein the
2   partial address of an input value at computation stage i is the
3    $(i-1)$ most significant bit of the storage element of computation
4   stage $(i-1)$.

1   7. (previously presented) The system of claim 1, wherein the
2   partial address of an input value at computation stage i is the
3    $(i-1)$ least significant bit of the storage element of computation
4   stage $(i-1)$.

1 8. (original) The system of Claim 1 wherein the number of
2 computation stages K is related to the size N of the array of
3 data values by the formula $K = \log_2 N$.

1 9. (original) The system of Claim 8 wherein the number of
2 decision unites at a computation stage i is equal to N/2i and
3 wherein $1 \leq i \leq K$.

1 10. (original) The system of Claim 8 wherein the last computation
2 stage contains the address of the specific value in the K most
3 significant bits of its associated storage element and the
4 specific value is contained in the W least significant bits of
5 said associated storage element.

1 11. (original) The system of Claim 8 wherein the last computation
2 stage contains the address of the specific value in the K least
3 significant bits of its associated storage element and the
4 specific value is contained in the W most significant bits of
5 said associated storage element.

1 12. (previously presented) An apparatus for obtaining information
2 on a specific value within a pair of inputs, wherein each input
3 contains a data value and a partial address of the data value,
4 the apparatus comprising:
5   (a) a binary operator which compares the data values and
6 which generates as output a binary decision representative of a
7 local address of the specific data value;
8   (b) a multiplexer coupled to the binary operator and coupled
9 to receive each data values along with its partial address which
10 generates as output the specific data value along with its
11 partial address based on the binary decision; and

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12   (c) a storage element coupled to the binary operator and the

13   multiplexer which stores the output of the multiplexer and the

14   binary decision.

1   13. (canceled)

1   14. (original) The apparatus of Claim 12 wherein the binary

2   operator is a minimum operator.

1   15. (original) The apparatus of Claim 12 wherein the binary

2   operator is a maximum operator.

1   16. (currently twice amended) In an array of N data values, a

2   method of determining an address for a result, the result being

3   the output of a binary operation defined in the array of data

4   values each data value having W bits, the method comprising the

5   steps of:

6   (a) performing, at each computation stage i of $\log_2 N$,

7   computation stages, $N/2^i$ binary operations on the data values of

8    $N/2^i$ pairs of input values using a binary operator, wherein each

9   input value includes a data value and a partial address, wherein

10   each of the binary operations generates a binary decision

11   representative of a selected data value and the partial address

12   of the selected data value;

13   (b) multiplexing at each computation stage each pair of

14   input values using a multiplexer and producing an output

15   determined by the binary decision; and

16   (c) storing at each computation stage the binary decision

17   and the selected data value [[input]] in a storage element.

1   17. (canceled)

1 18. (original) The method of Claim 16 wherein the computation
2 stage at level log2N contains the value of the result of the
3 binary operation and its address within the array of values.

1 19. (original) The method of Claim 16 wherein the binary
2 operation is minimum finding operation.

1 20. (original) The method of Claim 16 wherein the binary
2 operation is a maximum finding operation.

1 21. (canceled)

1 22. (canceled)

1 23. (canceled)

1 24. (canceled)

1 25. (canceled)